



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,063	07/22/2003	Venkateshwar Rao Pullela	79771	8263

26327 7590 02/22/2006

THE LAW OFFICE OF KIRK D. WILLIAMS
1234 S. OGDEN ST.
DENVER, CO 80210

EXAMINER

DOAN, DUC T

ART UNIT PAPER NUMBER

2188

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,063

Applicant(s)

PULLELA ET AL.

Examiner

Duc T. Doan

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 10, 12-17 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 10, 12-17 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/12/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAIL ACTION

Status of Claims

Response to Amendment

Claims 1-25 were pending in this application. In response to the last Office Action, Claims 1,9,11,18-19 were canceled. Claims 2-7,10,12-17,20-25 were amended. As a result, claims 2-8,10,12-17,20-25 are remain pending in this application.

Claims 2-8,10,12-17,20-25 are rejected.

All rejections and objections not explicitly repeated below are withdrawn.

Applicant's arguments filed 1/26/06 have been fully considered but they are not persuasive. Therefore, the rejections from the previous office action are respectfully maintained, with changes as needed to address the amendments.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2,10,12,20 of the instant application are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15,19,20,24 of copending application 10/625012 respectively. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Instant application 10/625063; Claim 2	Copending application 10/625012; Claim 15
A method for processing packets, the method comprising: Identifying a packet; Identifying a flow identification value based on the packet; Performing a lookup based on the flow identifying value to identifying a flow identification value mask; and	A method for processing packets, the method comprising: Identifying a packet; Identifying a flow identification value based on the packet; Performing a lookup based on a lookup value including the flow identifying value to identifying a flow identification value mask;

Masking the flow identification value with the flow identification value mask to generate a masked flow identification value.	and Masking the flow identification value with the flow identification value mask to generate a masked flow identification value.
	Hashing the masked flow identification value identification value to generate a hashed Masked flow identification value identification value; Performing an content addressable memory lookup operation on a set of content Addressable memory entries based on a lookup value including hashed masked-flow Identification value identification value to identify an address location; and Performing an operation based on the address location.
Instant application 10/625063; Claim 10	Copending application 10/625012; Claim 19
An apparatus for processing packet, the apparatus comprising: a packet processing engine configured to identify a packet and a flow identification	An apparatus for processing packet, the apparatus comprising: a packet processing engine configured to identify a packet and a flow identification

<p>value based on the packet</p> <p>an content addressable memory configured to perform a first lookup operation based on the flow identification value to identifying a matching location;</p> <p>an adjunct memory configured to perform a second lookup operation based on the matching location to identify a flow identification value mask;</p> <p>masking logic configured to mask the flow identification value with the flow identification value mask to generate a masked flow identification value;</p> <p>a value memory for storing values; and</p> <p>a control configured to update a value at a position corresponding lo the third lookup result in the value memory.</p>	<p>value based on the packet</p> <p>an content addressable memory configured to perform a first lookup operation based on the flow identification value to identifying a matching location;</p> <p>an adjunct memory configured to perform a second lookup operation based on the matching location to identify a flow identification value mask;</p> <p>masking logic configured to mask the flow identification value with the flow identification value mask to generate a masked flow identification value;</p> <p>a value memory for storing values; and</p> <p>a control configured to update a value at a position corresponding lo the third lookup result in the value memory.</p>
	<p>a hashing function configured to hash the masked flow identification value to generate a hashed masked flow identification value;</p> <p>a second content addressable memory configured to perform a third lookup</p>

	operation based on the masked flow identification value to identify a third lookup result;
Instant application 10/625063; Claim 12	Copending application 10/625012; Claim 20
A computer-readable medium containing computer-executable instructions for performing steps for processing packets, said steps comprising: identifying a packet; identifying a flow identification value based on the packet; performing a lookup based on the flow identification value to identify a flow identification value mask; masking the flow identification value with the flow identification value mask to generate a masked flow identification value;	A computer-readable medium containing computer-executable instructions for performing steps for processing packets, said steps comprising: identifying a packet; identifying a flow identification value based on the packet; performing a lookup based on the flow identification value to identify a flow identification value mask; masking the flow identification value with the flow identification value mask to generate a masked flow identification value;
	hashing the masked flow identification value identification value to generate a hashed masked flow identification value

	<p>identification value;</p> <p>performing an content addressable memory lookup operation on a set of content addressable memory entries to identify an address location; and</p> <p>performing an operation based on the address location.</p>
Instant application 10/625063; Claim 20	Copending application 10/625012; Claim 24
<p>An apparatus for processing packets, the apparatus comprising:</p> <p>means for identifying a flow identification packet;</p> <p>means for identifying a flow identification value based on the packet;</p> <p>means for performing a lookup based on the flow identification value to identify a flow identification value mask;</p> <p>means for masking the flow identification value with the flow identification value mask to generate a masked flow identification value;</p>	<p>An apparatus for processing packets, the apparatus comprising:</p> <p>means for identifying a flow identification packet;</p> <p>means for identifying a flow identification value based on the packet;</p> <p>means for performing a lookup based on the flow identification value to identify a flow identification value mask;</p> <p>means for masking the flow identification value with the flow identification value mask to generate a masked flow identification value;</p>

	<p>mean for hashing the masked flow identification value identification value to generate a hashed masked flow identification value identification value; means for performing an content addressable memory lookup operation on a set of content addressable memory entries to identify an address location; and performing an operation based on the address location.</p>
--	--

Claim Rejection 35 USC 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-17 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 11 is not limited to tangible embodiments. In view of applicants' disclosure, specification page 7, lines 12-18, the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., storage device, page 7, line 14) and intangible embodiments (e.g., signal mechanism, page 7, line 15; signal received and transmitted,

page 7, line 17). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

All dependent claims are rejected as having the same deficiencies as the claims they depend from.

Claim Rejection 35 USC 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As for claim 12, a computer-readable medium as described in the specification on page 7, paragraph begin with line 12 includes “storage mechanism”. The “storage mechanism” includes “storage device and other mechanism for maintaining instruction or data in any format”. There is not a requirement that storage mechanism to be storage media to store instructions or data. Furthermore, the “storage device” includes “network services” which can be interpreted broadly as any functions implementing over a vast network. It makes the scope of the computer-readable medium unclear. Since the computer-readable medium is directed to non-statutory subject matter, as such the claim is not limited to statutory subject matter and is therefore non-statutory.

All dependent claims are rejected as having the same deficiencies as the claims they depend from.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2,4-8,12-17,20,22-25 rejected under 35 U.S.C. 102 (e) as being anticipated by Ikeda et al (US 6788683).

As for claim 2, Ikeda describes a method for processing packets, the method comprising: identifying a packet (Ikeda's Fig 1: #1); identifying a flow identification value based on the packet (Ikeda's Fig 1: #21 received VPI/VCI) ; performing a lookup based on the flow identifying value to identifying a flow identification value mask (Ikeda's Fig 1: #3 lookup retrieval table to identify retrieval flag; column 3 lines 20-30); and masking the flow identification value with the flow identification value mask to generate a masked flow identification value (Ikeda's Fig 1: #26 retrieval key; column 3 lines 20-30).

As for claim 4, Ikeda describes wherein the flow identification value includes at least two items of the list consisting of source address, destination address, source port, destination port,

and protocol type (Ikeda's Fig 2 shows the retrieve flag to mask corresponding fields in the packet header such as source address, destination address).

As for claim 5, Ikeda describes wherein the flow identification value includes a transport layer, session layer, presentation layer or application layer value (Ikeda's column 1, lines 47-55).

As for claim 6, the claim recites wherein said performing a lookup based on the flow identification value includes performing a lookup operation in an access control list. Ikeda describes a lookup of the retrieval flag table (Fig 1: #3), which is based on the information from a received IP packet. The lookup information in the retrieval flag table is used to further filter packets in a router (Fig 2: #5,7). Thus the retrieval flag table functions as the claim's access control list.

As for claim 7, the claim recites wherein said performing the lookup operation based on the flow identification value includes: performing a first lookup operation on a first set of associative memory entries based on the flow identification value to generate an associative memory result; and performing a second lookup operation in an adjunct memory based on the associative memory result to identify the flow identification value mask. Examiner notes that the claim describing a standard lookup function of a content addressable memory and retrieving data from its associating ram portion. Ikeda describes the retrieval flag table (Fig 1: #3), which is looked up using the header information from received packet. The retrieval flag table is used to retrieve retrieval flag which corresponding to the claim's identification value mask. Since the lookup of the retrieve flag table based on the matching of fields in a received IP packet. It's inherently the retrieve flag table to be implemented using an associative memory device such as content addressable memory and it's associating ram portion.

Claim 8 rejected based on the same rationale as in the rejection of claim 6.

Claim 20 rejected based on the same rationale as in the rejection of claim 2.

Claim 22 rejected based on the same rationale as in the rejection of claim 4.

Claim 23 rejected based on the same rationale as in the rejection of claim 5.

Claim 24 rejected based on the same rationale as in the rejection of claim 6.

Claim 25 rejected based on the same rationale as in the rejection of claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3,10,21 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al (US 6788683) as applied to claims 2,20 respectively and further in view of Yasue (US Pub 2004/0028041).

As for claim 3, the claim recites updating a data structure based on the masked flow identification value. Ikeda does not describe the claim's detail of updating a data structure. However, Yasue describes a memory (Yasue's Fig 9: #71), which uses the flow information (Fig 9: flow no 90f) to keep track and updating a statistic value such as received byte number of packets (Fig 9: #s11). It would have been obvious to one of ordinary skill in the art at the time of

invention to include statistic value as suggested by Yasue in Ikeda's system to keep track of bytes being received and thereby determining a violation of band policy (Yasue's page 6, paragraphs 128, 133).

Claim 10 recites the limitations of claims 2 and 3. Therefore, the claim is rejected based on the same rationale as in the rejection of claims 2-3.

Claim 21 rejected based on the same rationale as in the rejection of claim 3.

Response to Arguments

Applicant's arguments in response to the last office action has been fully considered but they are not persuasive. Examiner respectfully traverses Applicant's arguments for the following reasons:

As to the remarks on pages 2-3 concerning the claim 1,

Ikeda shows in Fig 5 a received packets consists of many fields such as VPI/VCI fields in the header section and IP header and TCP header in the payload section of the received packet. The information in these fields, for example, VPI/VCI and IP header etc. corresponds to the claim's flow identifier value. Thus Ikeda shows in Fig 1, using the VPI/VCI to get the "flow masked value" retrieved flag. The retrieved flag is used to mask the "flow identifier value" such as values in IP headers to obtained a "masked flow value" as shown in Ikeda's Fig 6. Examiner notes that the specification Fig 1B clearly describes the flow identifier value including information in the transport layer, (for example similar to the IP transport information of the

payload section in Ikeda's Fig 5) **and other fields (corresponds to Ikeda's Fig 5 VPI/VCI fields)**. Therefore, Ikeda teaching is deemed to meet the claim's language.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Applicant's amendment filed 8/18/03 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mano Padmanabhan
2/13/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER